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Radiation

Safety

Committee

Minutes of Meeting held August 31, 1999

Reachbacks for RHIC RF

Present: L. Ahrens, D. Beavis, A.Etkin, R.Frankel, P., Joshi, T. Robinson, A.Stevens, S.V.

Presently PASS turns off the RF (or holds it off) by two methods. Each RF cavity power supply has a 440V contactor and a Ross relay to short the HV to ground. There will be a total of 14 operating cavities at RHIC. Each cavity can potentially produce an exposure level of over 100 rem/hr in the secured RHIC tunnel. A failure of the contactor or Ross relay on any power supply to function properly is detected by PASS and will cause the beam imminent alarms to continuously alert in the tunnel. At present there is no reachback device to provide automatic protection on such a failure. It would take a failure of the Ross relay and the contactor to create the potential for exposure to personnel. A reachback device has always been considered desirable by the committee and it adds to the failsafe nature of the system design.

Due to scheduling issues the committee has been requested to consider allowing the RF to operate without reachbacks until after FY00 operations.

The committee recommends that this would be acceptable provided:

- 1) Documented Engineering review of the critical devices as implemented. J. Sandberg or a designee will conduct the review. This must be complete before RF testing in the Fall. (CK-RHIC-FY00-RF)
- 2) A monitored failure of a critical device cause an alarm to annunciate at the appropriate control room and associated procedures for responding to such an alarm. This is in effect an administrative reachback. This is also required before RF testing operation in the Fall. This process must take in account local operation and remote operation from MCR. (CK-RHIC-FY00-RF)
- 3) Software change will be required to latch and reset a failure bit for the device. (CK-RHIC-FY00-RF)

It is expected that a design for a cavity by cavity reachback mechanism will be implemented before FY01 operations. (CK-RHIC-FY01-RF)

It was noted the RF controls may need to be upgraded to allow for more gracefully turning off the RF. Should control changes will under go the appropriate engineering reviews and are not part of the committees scope. Care should be taken that the PASS functions in the power supplies are not compromised.

A review will be conducted of change in the RHIC state tables and PASS software which will allow for standalone RF testing while changes are being tested on the other PEER systems.

Other Discussions

The chair noted that a review had been conducted for the removal of obsolete wiring and relay logic at the LINAC. The polarized proton source is being moved upstream of the RFQ. The RFQ and all subsequent transport elements will be common to both sources, therefore the old logic related to two separate low energy beam transports (LEBT) is being removed.

A review of the security groups components failure log was conducted. A summary of the failures of system components during the last eight years will be written and distributed to the committee.